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ALIA, CURTIS A				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/789,843

Applicant(s)

RIBAS ET AL.

Examiner

Curtis A. Alia

Art Unit

2616

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 7, 9, 11 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9, 11 and 13-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's amendment filed on 8 April 2008 has been entered. Claims 5, 8, 10 and 12 have been cancelled, claims 1, 9, 17 and 18 have been amended, and claims 19-22 have been added. Claims 1-4, 6-7, 9, 11 and 13-22 are still pending, with claims 1 and 9 being independent.

Response to Arguments

1. Applicant's arguments filed 8 April 2008 regarding claims 1-7 have been fully considered but they are not persuasive. Applicant stated that the claims as amended are overcome by the rejection.

Regarding applicant's argument that amended claim 1, specifically the limitation "determining a plurality of RNR values, wherein determining each RNR value includes determining an increase of a respective reverse noise measurement of the corresponding reverse noise measurements, relative to the reverse noise floor, and wherein each RNR value corresponds to the number of active users indicated by the forward code domain measurement that is obtained substantially simultaneously with the reverse noise measurement used to determine the RNR value," Examiner respectfully disagrees.

Zuniga teaches determining a reverse noise floor value. Stilwell discloses obtaining a plurality of forward code domain measurements in a CDMA base station. Love teaches the

relationship between an outage probability (obtained noise rise exceeding a threshold) and the number of data calls at a time (number of active users) (see paragraphs 98 and 99). The probability that the noise rise will exceed a threshold for a given number of calls is derived as shown in paragraphs 98 and 99.

The definition of a reverse noise rise is the increase in noise measurement relative to the noise floor (noise floor being the amount of interference during a period of inactivity at the base station).

Furthermore, obtaining the forward code domain measurements *substantially simultaneously* with the reverse noise measurements is well known, as it has been well known at the time of the invention that multiple measurements can be acquired at roughly the same time or in direct succession of each other (substantially simultaneous).

2. Applicant's arguments, filed 8 April 2008, with respect to the rejection(s) of claim(s) 9-18 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of 112, 1st paragraph, new matter.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 9-18 and 21-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 9, the new matter situation lies in the limitation “*determining at least one ratio that is at or above a probability threshold.*” In the most reasonable interpretation by the Examiner, this limitation is not supported by the specification, as nowhere in the specification does it describe finding a ratio that meets or exceeds a probability threshold.

Page 14 of the Specification recites “determining system capacity includes forming a ratio of the number of measurements having an RNR below a threshold (for example, 3dB) to the total number of measurements” and finding an “acceptable ratio” and increasing that ratio until the “probability is unacceptably low.” The action of “determining at least one ratio that is *at or above a predetermined probability threshold*” is not present in the Specification. There is no correlation between increasing the number of users until the probability is unacceptably low and determining a ratio that is at or above a predetermined probability threshold. The specification mentions “acceptable probability...that is within the defined confidence interval.” In the best understanding of the Examiner, a defined confidence interval is not the same as a predetermined probability threshold.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 1, and 3-4, are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga (previously cited US 2003/0218974) and Stilwell (previously cited US 6,137,773) in view of Love et al. (previously cited US 2004/0219920).

Regarding claim 1, Zuniga discloses a method comprising determining a reverse noise floor (see paragraph 26, lines 1-4), obtaining reverse noise measurements (see paragraph 13, lines 1-5).

Zuniga does not explicitly teach that the method further comprises obtaining a plurality of forward code domain measurements and determining a maximum number of users such that the probability of exceeding a predetermined RNR value is below a threshold.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Stilwell. In particular, Stilwell teaches obtaining a plurality of forward code domain measurements (see column 1, lines 18-27, measurements are made on the CDMA base station, such as code domain power, timing and phase).

In view of the above, having the method of Zuniga, then given the well-established teaching of Stilwell, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Zuniga as taught by Stilwell, since Stilwell stated in column 1, lines 17-18 that the testing of CDMA base stations is specified in the TIA IS-97.

Zuniga and Stilwell do not explicitly teach that the method further comprises determining a maximum number of users such that the probability of exceeding a predetermined reverse noise rise is below a threshold.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Love. In particular, Love teaches determining a plurality of RNR values (see paragraphs 98-99, noise rise and noise threshold), wherein determining each RNR value includes determining an increase of the respective reverse noise measurements of the corresponding reverse noise measurements, relative to the reverse noise floor (by definition, the reverse noise rise is measured as the increase in noise measured relative to the reverse noise floor measurement), and wherein each RNR value corresponds to the number of active users indicated by the forward code domain measurement (see paragraphs 98-99, the probability that an outage will occur (reverse noise rise exceeding a threshold, the outage probability is set for a number of calls being made, so the probability equation can determine the highest number of users allowed before the RNR probability exceeds the threshold).

In view of the above, having the method of Zuniga and Stilwell, then given the well-established teaching of Love, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Zuniga and Stilwell as taught by Love, since Love stated in paragraph 9 that the impact of adjacent cells is taken into account in determining BTS parameters.

Zuniga, Stilwell, and Love do not explicitly teach that the forward code domain measurements and the reverse noise measurements are obtained substantially simultaneously. However, it is well known in the art to obtain different measurements at the same time. Thus, it

would have been obvious to a person having ordinary skill in the art at the time of the invention to obtain the measurements substantially simultaneously.

Regarding claim 3, Zuniga, Stilwell, and Love teach all of the limitations with the exception of the step of determining the reverse noise floor being performed by obtaining reverse noise measurements during a period of inactivity. However, this step is inherent by definition: the reverse noise floor is the amount of reverse link noise when no communication is present.

Regarding claim 4, Zuniga discloses determining reverse noise rise measurements by comparing the reverse noise measurements to the reverse noise rise (see paragraph 12 and equation 1).

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga and Stilwell in view of Love as applied to claim 1, and further in view of Meyer et al. (previously cited US 6,236,866).

Regarding claim 2, Zuniga, Stilwell, and Love do not explicitly teach that the forward code domain measurements comprise the number of active forward links.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Meyer. In particular, Meyer teaches that the forward code domain measurements comprise the number of active forward links (see column 4, lines 44-47 determining the number of users actively using the network is performed).

In view of the above, having the method of Zuniga, Stilwell and Love, then given the well-established teaching of Meyer, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Zuniga, Stilwell and Love as taught by Meyer, since Meyer stated in column 4, lines 3+ that automatic and dynamic control and stabilization of geographical coverage of a cell without utilizing any feedback signal is possible.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga in view of Stilwell and Love as applied to claim 1 above, and further in view of Ishikawa et al. (previously cited US 5,838,671).

Regarding Claim 6, Zuniga, Stilwell, and Love do not explicitly teach that the step of determining a maximum number of users includes, using measurements corresponding to those at or below a specific number of active sessions, forming a ratio of the number of measurements having an RNR below 3 decibels to the number of measurements corresponding to those at or below the specific number of active sessions, And comparing the ratio to a confidence level.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Ishikawa. In particular, Ishikawa teaches determining a maximum number of users includes, using measurements corresponding to those at or below a specific number of active sessions, forming a ratio of the number of measurements to the number of measurements corresponding to those at or below the specific number of active sessions, and comparing the ratio to a confidence level (see abstract, a calculation and relationship between the number of users connectable to the

base station and the interference threshold to determine a probability of blocking new users and a probability of an outage).

In view of the above, having the method of Zuniga, Stilwell and Love, then given the well-established teaching of Ishikawa, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Zuniga, Stilwell and Love as taught by Ishikawa, since Ishikawa stated in column 2, lines 49-55 that dealing with traffic variations or propagation state changes while guaranteeing a predetermined communication quality.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga and Stilwell in view of Love as applied to claim 1, and further in view of Lee et al. (previously cited US 7,158,812).

Regarding claim 7, Zuniga, Stilwell, and Love do not explicitly teach that the plurality of forward code domain measurements is obtained from base station transceiver.

Lee teaches that the plurality of forward code domain measurements is obtained from base station transceiver (see abstract, measuring the transmission of output power of the base station in a forward link at the base station as well as using a code domain analyzer).

In view of the above, having the method of Zuniga, Stilwell and Love, then given the well-established teaching of Lee, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Zuniga, Stilwell and Love as taught by Lee, since Lee stated in column 2, lines 15+ that it is possible to accurately measure

transmission output power of the pilot channel from among dynamically changing output power of the base station.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga in view of Stilwell and Love as applied to claim 1 above, and further in view of daSilva (previously cited "Interpreting CDMA Measurements," hereinafter daSilva).

Regarding claim 19, Zuniga, Stilwell, Love and Ishikawa do not explicitly teach that the plurality of forward code domain measurements include a data set having a time stamp, a plurality of code IDs, and power levels for each code ID.

However, the above-mentioned claimed limitations are well-known in the art, as evidenced by daSilva. In particular, daSilva teaches that the plurality of forward code domain measurements include a data set having a time stamp (see "Walsh Code Domain Timing" section, timing alignment is a part of Walsh code design, meaning that the codes are time stamped in the CDMA ASICs employed at the base station), a plurality of code IDs (see "Walsh Code Domain Power" section, paragraph 2, 64 Walsh codes, IDs from 0 to 63), and power levels for each code ID (see "Walsh Code Domain Power" section, Walsh code domain power measurements display each Walsh code and its power).

In view of the above, having the method of Zuniga, Stilwell and Love, then given the well-established teaching of daSilva, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Zuniga, Stilwell and Love as

taught by daSilva, since daSilva stated that IS-95 standard uses Walsh code domain power as an equivalent to spectrum analysis.

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga in view of Stilwell and Love as applied to claim 1 above, and further in view of Mueckenheim et al. (newly cited US 2001/0019543).

Regarding claim 20, Love discloses that RNR values are corresponding to a number of active users (see paragraphs 98-99, the probability that an outage will occur (reverse noise rise) exceeding a threshold, the outage probability is set for a number of calls being made, so the probability equation can determine the highest number of users allowed before the RNR probability exceeds the threshold).

Zuniga, Stilwell and Love do not explicitly teach displaying a visual indicator that depicts each RNR value of the plurality of RNR values versus a corresponding number of active users, and wherein the visual indicator is selected from the group consisting of (i) a graph, (ii) a histogram, and (iii) a probability distribution function plot.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Mueckenheim. In particular, Mueckenheim teaches displaying a visual indicator that depicts an RNR value corresponding to an active load, and wherein the visual indicator is a graph (see figure 2, this graph can be easily adapted to plot similar relationships, such as the relationship between the RNR and the number of calls being made (active users) as taught by Love).

In view of the above, having the method of Zuniga, Stilwell and Love, then given the well-established teaching of Mueckenheim, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Zuniga, Stilwell, and Love as taught by Mueckenheim, since Mueckenheim in paragraph 8 that improved radio resource allocation is performed.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis Alia whose telephone number is (571) 270-3116. The examiner can normally be reached on Monday through Thursday 8:00AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on (571) 272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2616

/Curtis A Alia/
Examiner, Art Unit 2616
6/20/2008

CAA